

Chemistry Department Guidelines for Senior Theses for Chemistry Concentrators

Background

Does the thesis survey and summarize the previous literature relevant to your project? Does it effectively summarize prior work from your group?

Objectives/Questions/Hypotheses

Does the thesis do one or more of the following?

- a) clearly define the objectives of the work that will be described? i.e. **What** did you set out to do?
- b) clearly define the questions being asked, motivation for the project and/or the hypothesis being tested? i.e. **Why** did you do this?

Results and Discussion

Is the work that was carried out described clearly, and are the results interpreted and discussed clearly? Why was a given experiment carried out? What were the results, and what do they mean? Did you consider alternative explanations and did you carry out the appropriate control experiments to distinguish between them?

Are the experiments and their analyses described at a level where an expert in your sub-discipline (e.g. chemical biology) but not necessarily in your specific area (e.g. kinase inhibitors), can follow along.

Experimental Descriptions

Are the experimental protocols and outcomes provided in sufficient detail so that someone else can use them to reproduce and verify your results? What is the level of detail that is expected for a publication in your area?

Conclusions

The thesis should include a conclusion that summarizes your main findings and outcomes. i.e. **What** did you learn. It is also often appropriate and recommended to include a brief discussion for what the next steps in the project should be, based on your findings.

Grammar, Prose, Formatting

Is the thesis well written and readable? Is it formatted so that figures, tables, etc. are easily read and interpreted? Are axes labeled, units included? Is it free of typos?

Citations

Are discussions of previous work adequately cited?

Does the format of the citations follow acceptable guidelines for journals in your field?

Are figures and illustrations taken from or adapted from the literature properly attributed?

Attribution

If the work was carried out in collaboration with other scientists in your lab or elsewhere, clearly indicate your contribution to the work – which experiments did you carry out? What was your role in experimental design and in the interpretation and presentation of data?